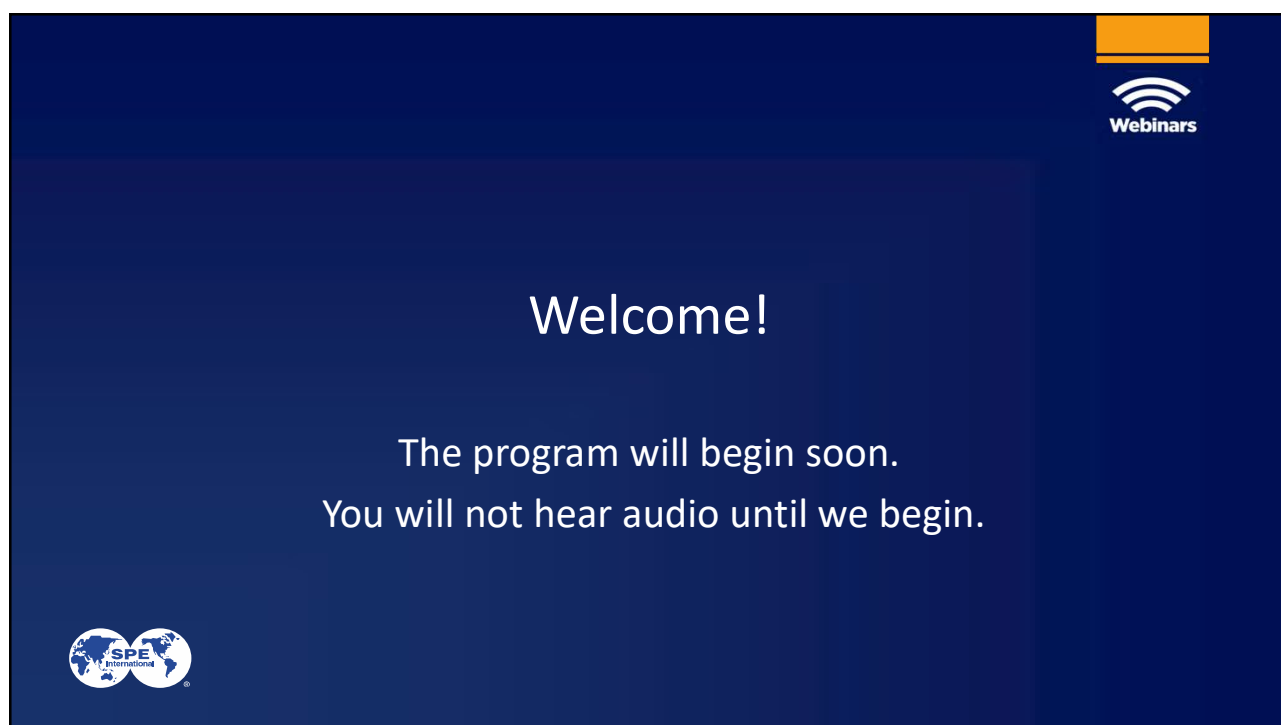




A dark blue rectangular slide with a lighter blue rectangular area in the center. In the top right corner, there is an orange square above a white Wi-Fi symbol and the word "Webinars". In the bottom left corner, there is a logo for SPE International, which consists of two globes and the text "SPE International".

# Welcome!

The program will begin soon.  
You will not hear audio until we begin.

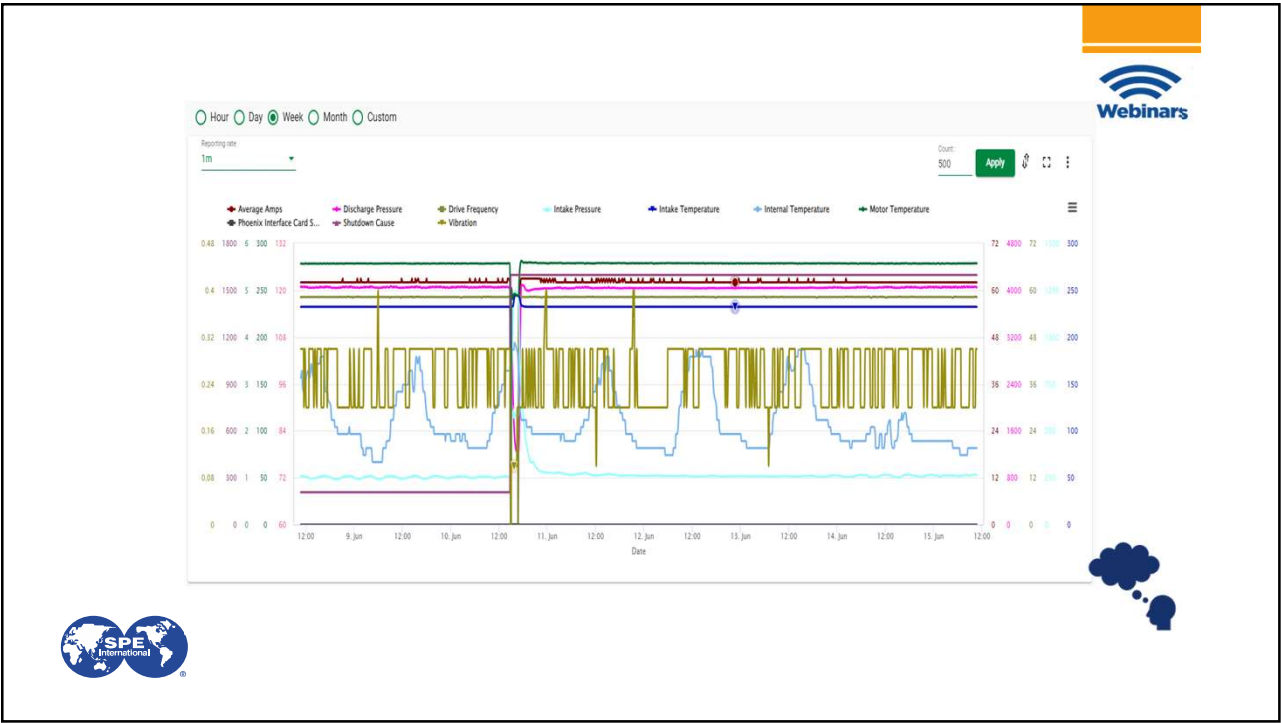


# ESP Smart Alarms for Real Time Diagnostics

Miguel Hernandez  
October 10, 2023



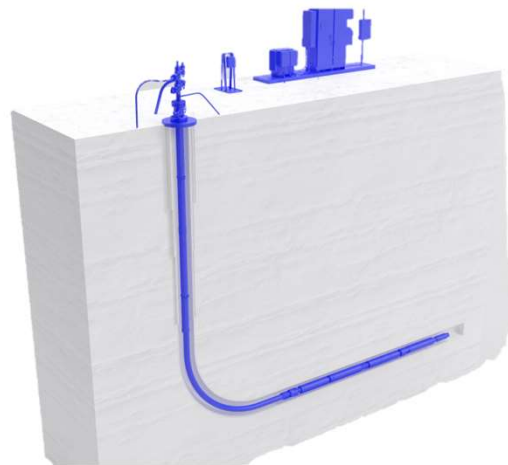




## Event Detection & Diagnostics - Importance



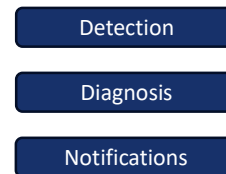
- ESP role in well productivity
- Cost Impact of Unplanned Shutdowns / Failures



## Event Detection & Diagnostics - Challenges



- Intensive Manual Expert Intervention
- Misinterpretation and Overlooking
- Latency
- Scalability



## Edge Computing in the O&G Industry



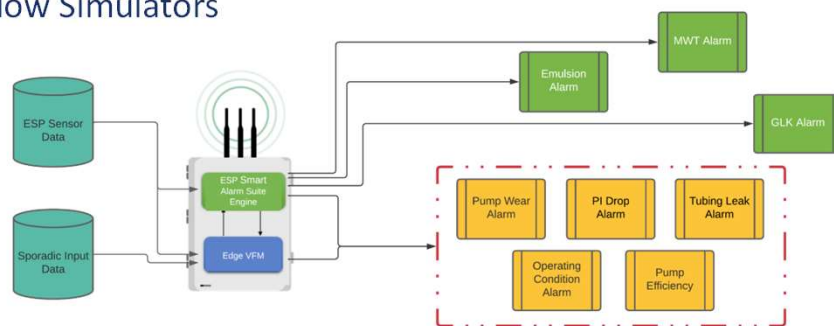
- What is it?
  - Processing data close to the data source
- Benefits
  - Real-time data processing
  - Reduced latency
  - Lighter Infrastructure
  - Enables Autonomous Operations



## The Solution - Real Time Diagnostics



- AI & Domain Knowledge
  - Machine Learning & Statistical Methods
  - Multiphase Flow Simulators
- Modular
- Scalable





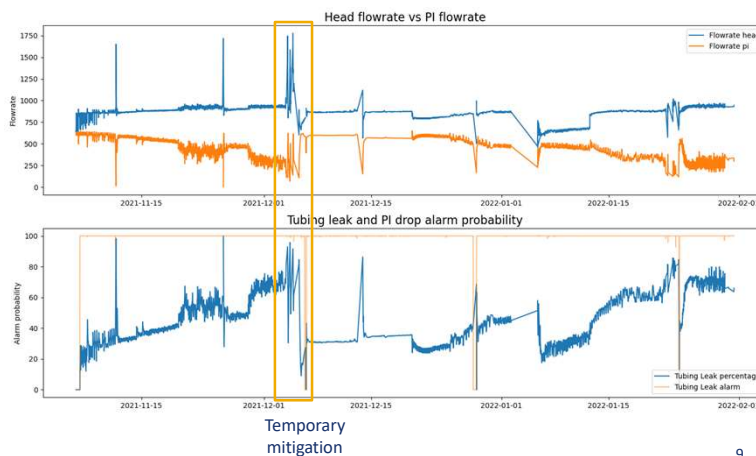
## Smart Alarm Example: Tubing Leak



DAYS



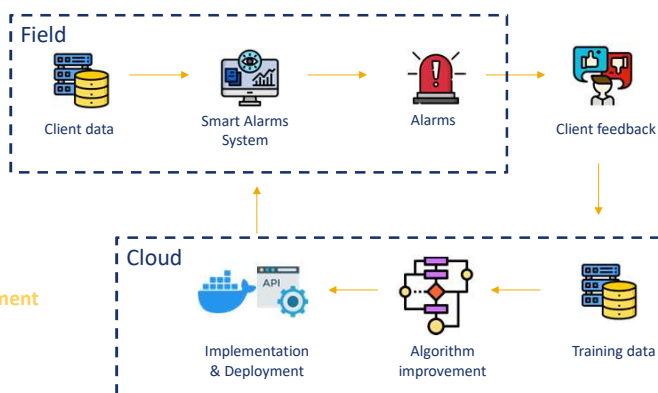
REAL TIME



## Implementation & Deployment



- Rapid field deployment
- Recursive algorithm improvement



10

# Solution Benefits



People Efficiency  
Run Life



Production Losses  
CO2 Emissions





